

PATENT SPECIFICATION

(11) 1 268 770

DRAWINGS ATTACHED

- (21) Application No. 55295/68 (22) Filed 21 Nov. 1968
 (23) Complete Specification filed 20 Nov. 1969
 (45) Complete Specification published 29 March 1972
 (51) International Classification H 01 r 5/08
 (52) Index at acceptance H2E 10B 10X 14 5 9B
 (72) Inventor LEONARD PHILIP GRAY



(54) ELECTRICAL CONNECTOR

(71) We, KENNETH GRUNDY of "Roughwood", Burwood Park, Walton-on-Thames, Surrey, JAMES ARTHUR ROUTLEDGE, of 16 Parkside, Hampton Hill, Middlesex, and LEONARD PHILIP GRAY, of "Morlea", Green Road, Thorpe Green, Thorpe, Egham, Surrey, all British Subjects, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns an electrical connector and has for its primary object to provide a connector by which a first conductor such as an electric cable or wire and a second conductor in the form of a foil or strip can be connected electrically, with both conductors firmly and securely held. Another object is to provide a connector by which a foil or like electrode such as in an electric blanket or other flexible heating system can be connected to a supply cable without risk of damage to or breakage of the foil.

According to the invention the connector comprises a conductive body having means for securing a first electric conductor thereto and a clamp assembly for securing a second conductor in the form of a metal foil or strip thereto, said clamp assembly consisting of a bottom plate with two spaced apart rows of upstanding tongues one row at each side of two opposite sides thereof and a top plate positioned between said tongues and spaced from the bottom plate prior to the clamping of the second conductor, which conductor is clamped by placing same on the bottom plate and applying force to bring the plates together so that the foil or strip is penetrated by the tongues which lie outside the top plate at each side and is held between the plates.

The force can be applied by a suitable hand tool such as pliers or grips.

Preferably the teeth of each row are turned in towards those of the other row so as to be bent down on to the top plate on the clamping operation.

In order to obtain a firm and spread connection on to the foil, the top plate can be concave with respect to the bottom plate. On

the clamping operation, the teeth will first be bent down on to the top plate and then the top plate will be flattened, the tool jaws being shaped appropriately to perform this operation.

In order that a clear understanding of this invention may be obtained reference will now be made to the accompanying drawings which show a preferred embodiment of a connector according to the invention and in which:

Figure 1 is a perspective view of the connector prior to the clamping operation.

Figure 2 is a perspective view after the tongues have been bent down on to the top plate, and

Figure 3 is a perspective view after the conclusion of the clamping operation, showing also a metal foil clamped in position.

As shown the connector is made from a parallel sided metal strip. One end is formed as a ferrule 10 into which an electric lead can be secured by crimping or soldering. The strip at the end opposite the ferrule is bent back on its length to form a bottom plate 11, from each side of which extends a row of tongues or teeth 12, those of each row being turned in towards those of the other row. The strip is bent back on itself at the end adjacent the ferrule to form the top plate 13. This plate is concave with respect to the bottom plate and its width is less than the minimum width between the teeth.

Metal foil strip F which may be covered or encased in an insulating foil, is clamped by placing its end on the plate 11 and pressure is applied to bring the plates together. After the sides of the top plate have passed below the top of the teeth which have penetrated the foil, the teeth are bent in on to this plate, and on the application of further pressure the top plate is flattened and the teeth pressed further down thereon.

Thus the foil is firmly clamped between the plates, the tongues having penetrated the foil, and a firm mechanical and good electrical connection is obtained.

WHAT WE CLAIM IS:—

1. An electrical connector comprising a conductive body having means for securing a

first electric conductor thereto and a clamp
assembly for securing a second conductor in
the form of a metal foil or strip thereto, said
assembly consisting of a bottom plate with
5 two spaced apart rows of upstanding tongues
one row at each of two opposite sides thereof
and a top plate positioned between said
tongues and spaced from the bottom plate
prior to the clamping of the second
10 conductor, which conductor is clamped by
placing same on the bottom plate and
applying force to bring the plates together so
that the foil or strip is penetrated by the
tongues which lie outside the top plate at
15 each said side and is held between the plates.
2. A connector as claimed in Claim 1,
wherein the teeth of each row are turned in
towards those of the other row so as to
be bent down on to the top plate on the
20 clamping operation.

3. A connector as claimed in Claim 2,
wherein the top plate is initially concave with
respect to the bottom plate and is flattened by
the clamping operation so that its side edges
rest adjacent to the teeth. 25

4. A connector as claimed in Claims 2 or 3,
wherein the opposite sides of the plates are
parallel.

5. A connector as claimed in any one of
the preceding claims, wherein the body 30
comprises a strip bent back in its length on
itself to form the bottom plate and then over
and forwardly to form the top plate.

6. An electrical connector constructed
substantially as herein described with refer- 35
ence to the accompanying drawings.

B. T. KING.
(Director).

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of
the Original on a reduced scale*

FIG. 1.

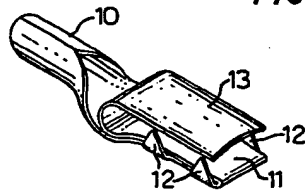


FIG. 2.

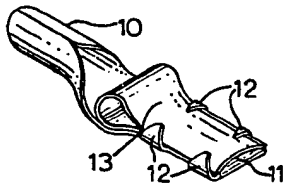
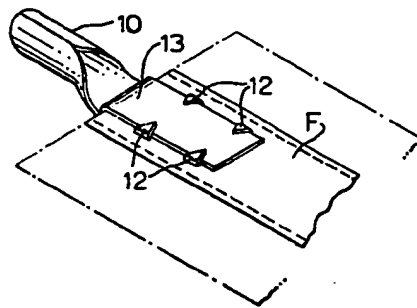


FIG. 3.



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